

Flight Scientist Report
Friday 06/10/2022 ACTIVATE RF171

Flight Type: Process Study Flight

Flight Route:

Special Notes: One of our best flights in that we got 2 excellent walls in moderate convection with 10+ level legs by the Falcon at various altitudes. Excellent case study for data analysis purposes. African dust in the region.

King Air

Pilot report (Slover):

ACTIVATE process study flight. First cloud target did not materialize into a good study area so flights found a new cloud formation that was somewhat flat and wide. Completed pedal patterns with dropsondes over this second weather cloud.

Flight scientist report (Shingler/Seaman):

Proceeded south to take a look at the clouds for a potential process study candidate on the climb out. Identified that some areas looked possible and returned to TXKF to intercept 524 on their takeoff. Guidance from the ground suggested fix EITEE for a target. We confirmed that looked like a reasonable target with tops up to an estimated 10-15kft. En route, that convection collapsed and dissipated down to about 6kft CTHs. We tried to hunt another target further to the west that looked viable but had not yet developed. 524 decided to cycle the collapsing cell that originated at EITEE which we ended up sampling with approximately 7 'petals' of the process study pattern. We dropped a total of 16 sondes at this site, with 2 at the cloud center, 1 at the clear air spiral, and the remaining 13 along the edges of the pattern. After this, we transited south to do two overflights of a cell that the Falcon sampled after the conclusion of the process study.

Ops Notes:

Process study.

Instrument notes:

Load sheds problem from RF170 was a little worse, but eventually we were able to maintain power and operate nominally.

Science notes:

Process study. Highly dynamic cumulus formation and dissipation.

Sonde drops:

16 sondes dropped.

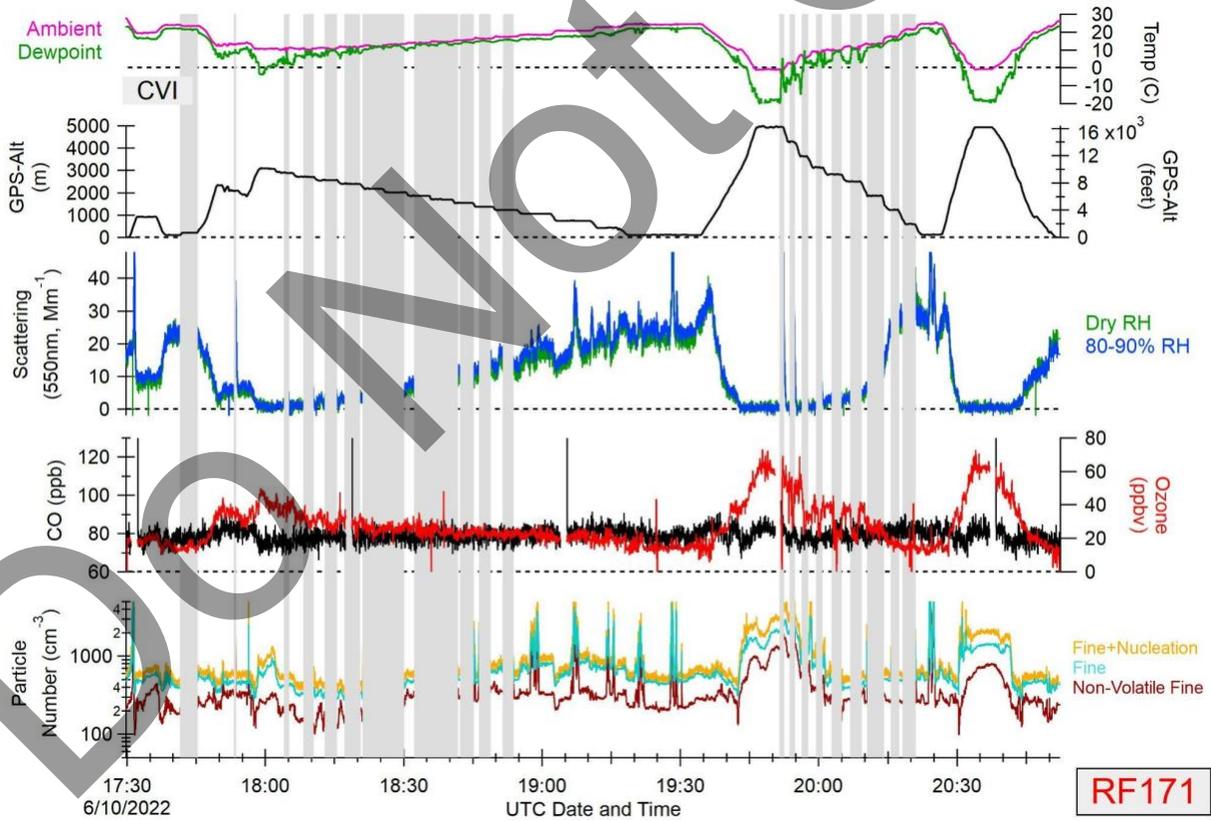
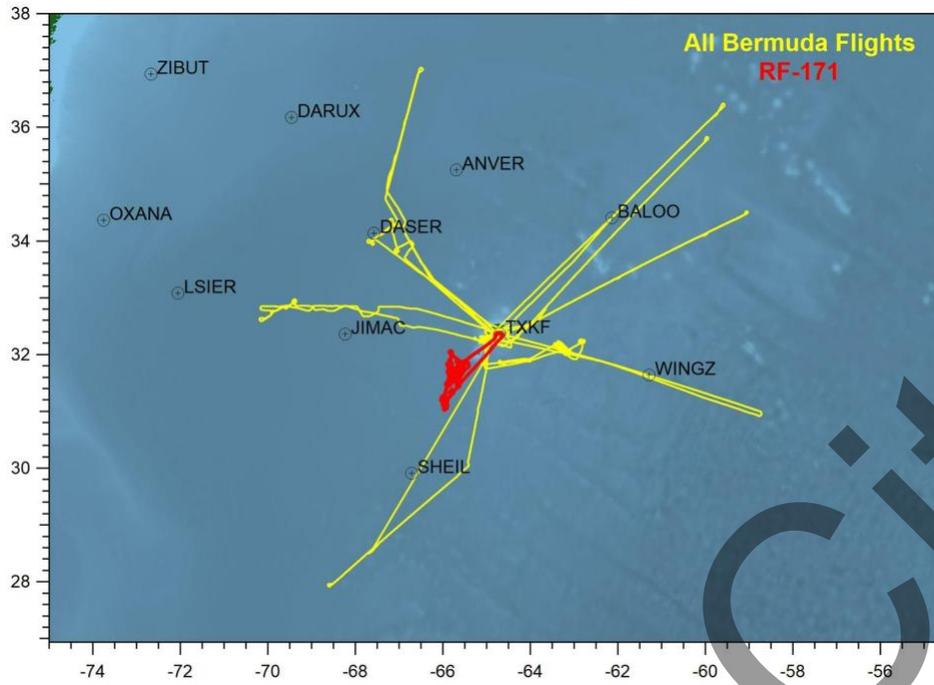
Falcon

Pilot report (Baxley):

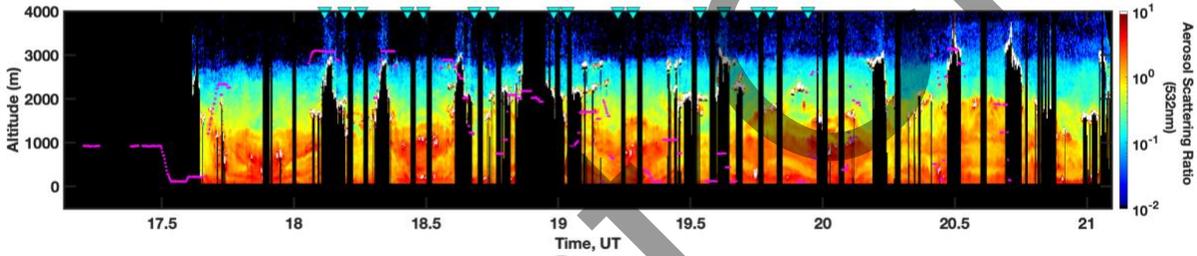
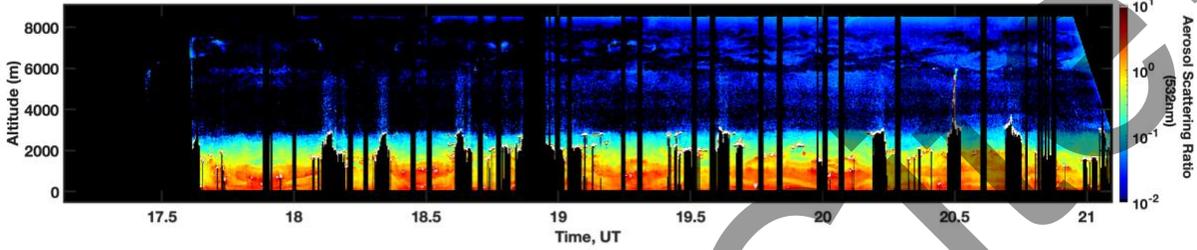
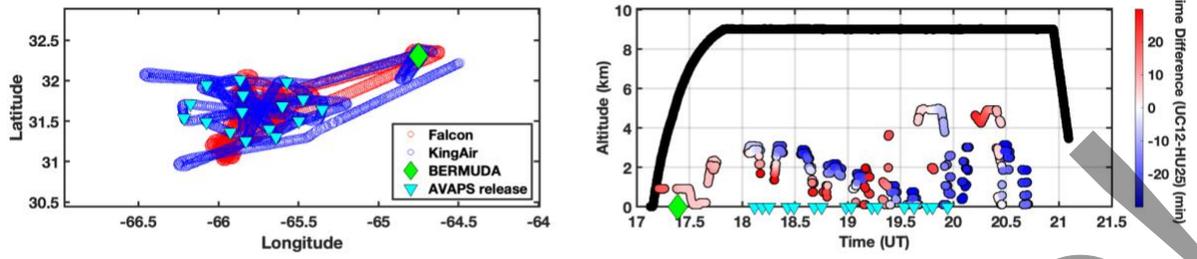
HU-25 ACTIVATE flight with UC-12; Elder/Baxley, Crosbie/Winstead Mission briefed to the south of TXKF, deviated from plan to find appropriate weather. First weather found at approximately 3159.48N/06547.59W and conducted multiple passes at different levels. Second weather found at 3107N/06558W, and again multiple passes at different levels. No anomalies or issues noted.

Flight scientist report ():

Do Not Cite!



20220610 - ACTIVATE - KingAir and Falcon flight tracks



DO NOT

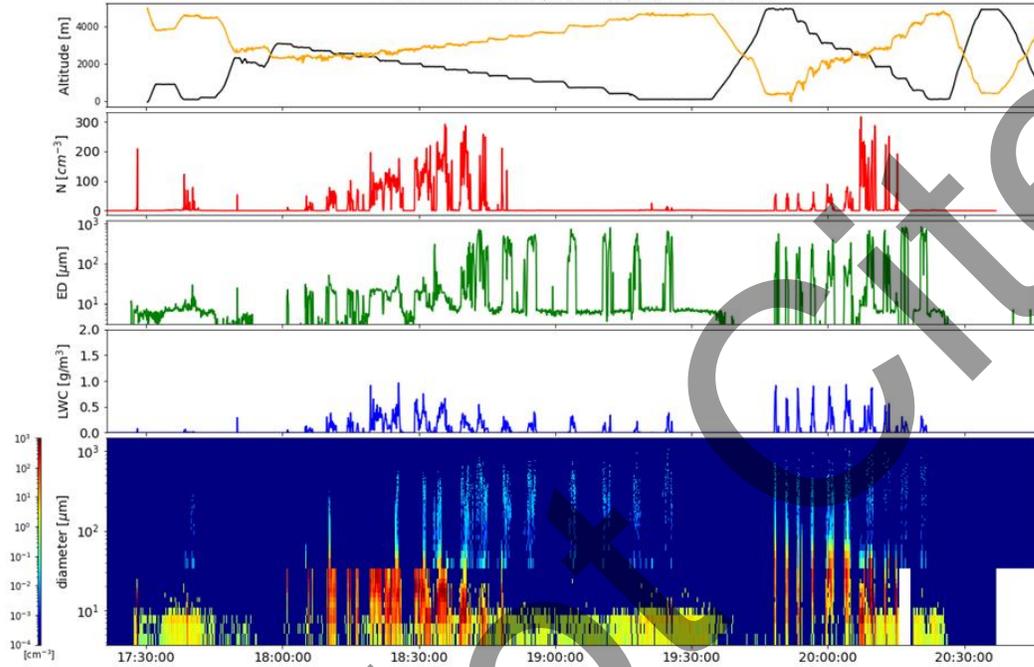
Quicklook ACTIVATE Cloud Probes (FCDP & 2DS) Quicklook

preliminary data, only for quicklook use

Simon Kirschler, Christiane Voigt, Richard Moore, Ewan Crosbie



Cloud Probes (FCDP & 2DS) Quicklook 10/06/2022 17:21:15-20:47:34

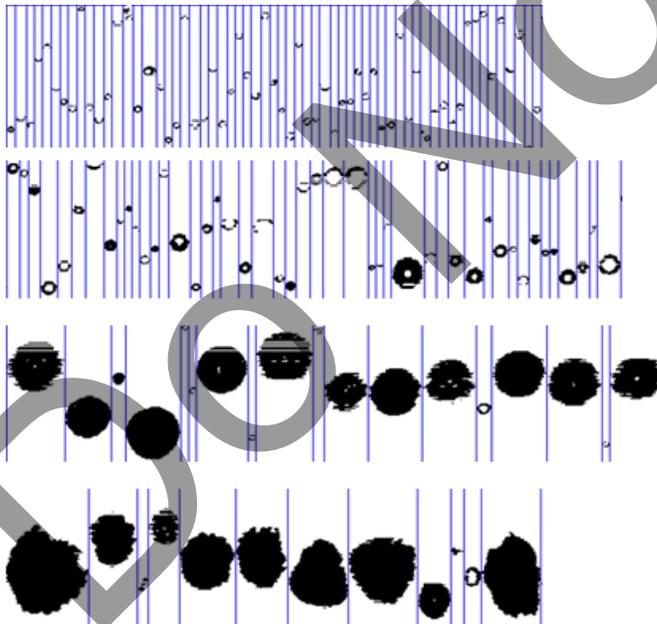
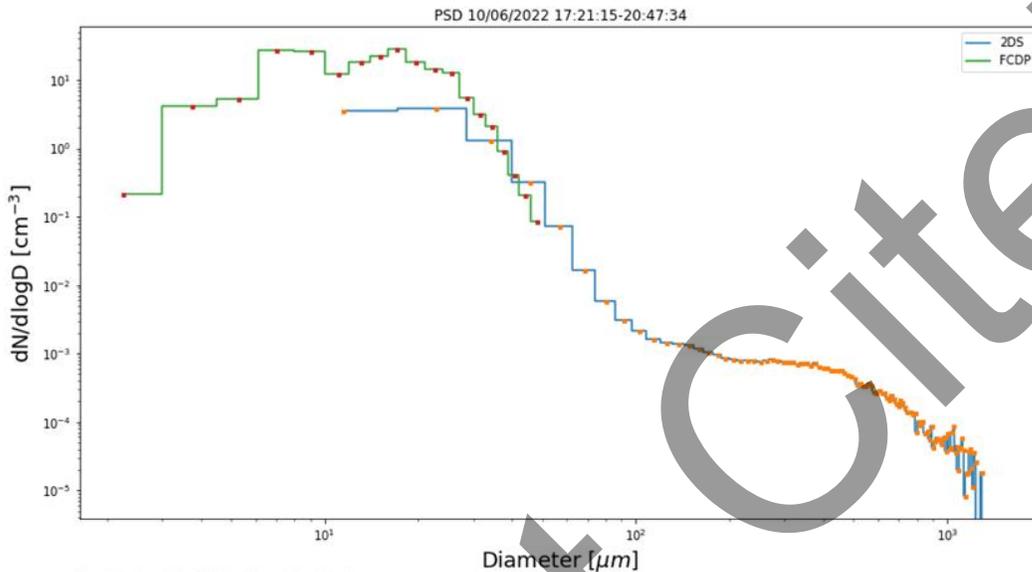


Simon.Kirschler@dlr.de, Christiane.Voigt@dlr.de, richard.h.moore@nasa.gov, ewan.c.crosbie@nasa.gov

DO NOT POST!

PSD ACTIVATE

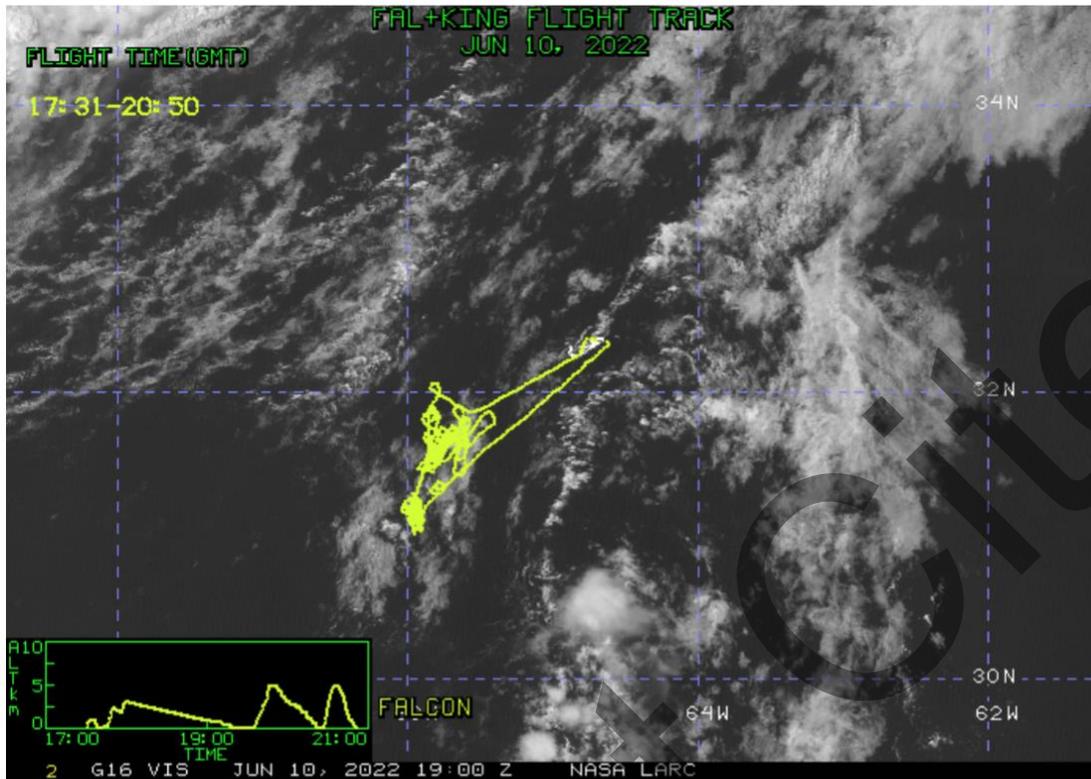
preliminary data, only for quicklook use
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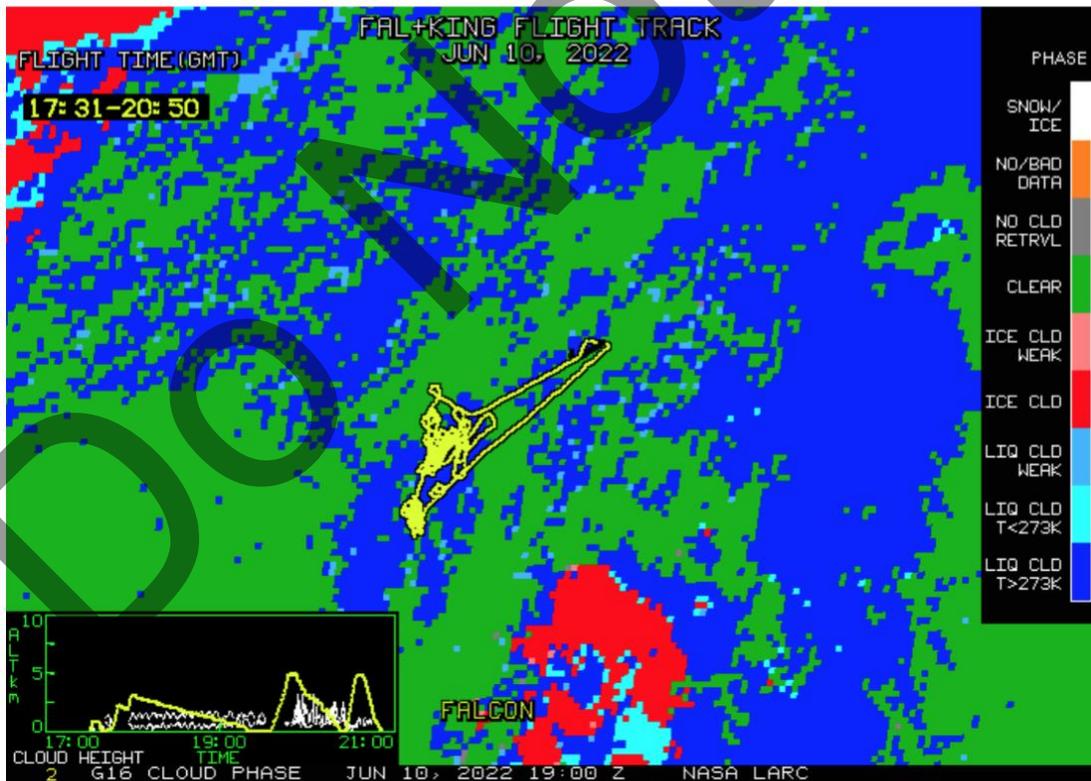
Almost all liquid cloud with Precip. Ice
(Graupel) at 19:49:11.

NASA-LaRC Clouds Group GOES-16 Quicklook Images for Flight 171, 19:00 UTC Jun 10, 2022

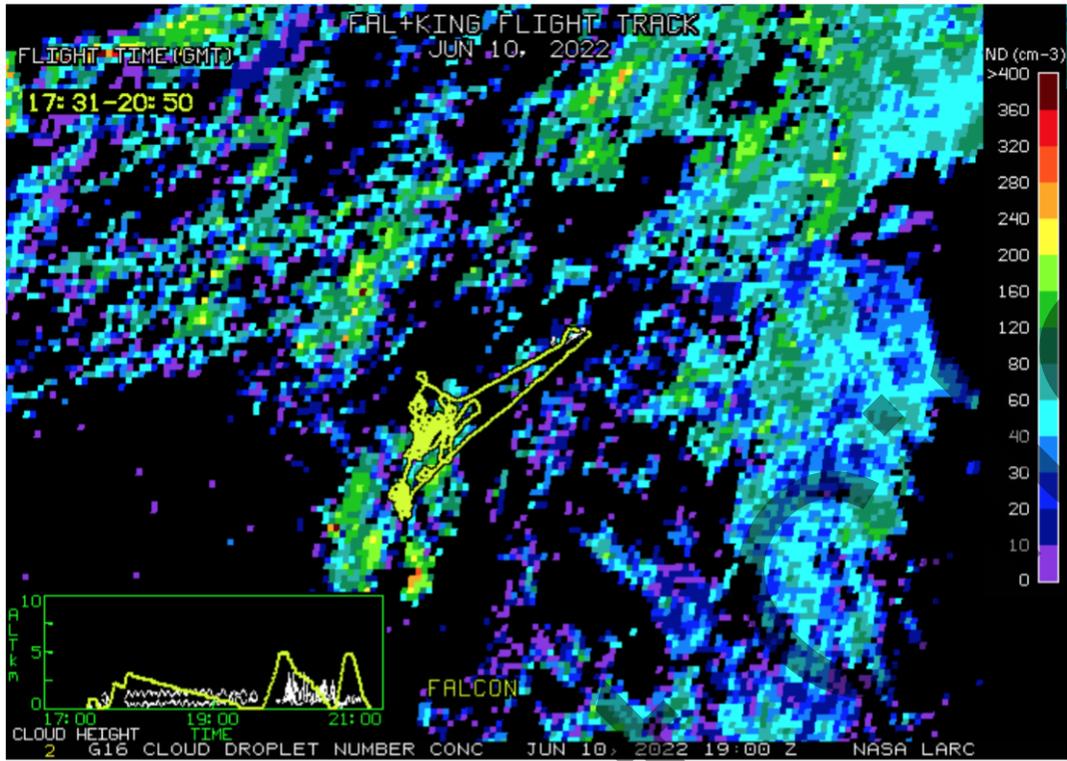
Visible Image



Cloud Phase



Cloud Droplet Number Concentration (cm-3)



Cloud-Top Height (Kft-ASL)

